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## Core promoter recognition complex changes accompany liver development.

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### Public Summary:

The study shows that not only transcription factors, but also the composition of the basal transcriptional apparatus exhibits specificity with regard to the differentiation stage of liver cells. The finding may facilitate the generation of hepatocytes from immature progenitor cells that function and proliferate better than cells generated with current protocols.

### Scientific Abstract:

Recent studies of several key developmental transitions have brought into question the long held view of the basal transcriptional apparatus as ubiquitous and invariant. In an effort to better understand the role of core promoter recognition and coactivator complex switching in cellular differentiation, we have examined changes in transcription factor IID (TFIID) and cofactor required for Sp1 activation/Mediator during mouse liver development. Here we show that the differentiation of fetal liver progenitors to adult hepatocytes involves a wholesale depletion of canonical cofactor required for Sp1 activation/Mediator and TFIID complexes at both the RNA and protein level, and that this alteration likely involves silencing of transcription factor promoters as well as protein degradation. It will be intriguing for future studies to determine if a novel and as yet unknown core promoter recognition complex takes the place of TFIID in adult hepatocytes and to uncover the mechanisms that down-regulate TFIID during this critical developmental transition.

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